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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,822	10/21/2003	Suresh K. Chengalva	DP-310096	6212
22851	7590	09/20/2004	EXAMINER	
DELPHI TECHNOLOGIES, INC.			CLARK, SHEILA V	
M/C 480-410-202			ART UNIT	
PO BOX 5052			PAPER NUMBER	
TROY, MI 48007			2815	

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/689,822

Applicant(s)

CHENGALVA ET AL.

Examiner

S. V. Clark

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10, 19 and 20 is/are allowed.
- 6) ☒ Claim(s) 1, 3-9, 11 and 13-18 is/are rejected.
- 7) ☒ Claim(s) 2 and 12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10-21-2003.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

Art Unit: 2815

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5, 6, 7, 8, 11, 15, 16, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Roh.

Roh shows a molded housing 100 having a integrated circuit (IC) 20 encased within. Multiple leads 30 are seen extending from the housing each having an exterior end within the housing. Each of said leads has an exterior end outside of the housing and adapted for electrical connection to substrate 15. A thermally conductive support structure 60 separated from the leads are also shown whereby the support structure comprises a base portion 60 (see figure 4) within the housing and multiple thermal leads 60 extending from the base portion, diverging in an opposite direction from said leads, protruding outside the housing and having distal ends configured to dissipate heat conducted away from the IC device. A molded housing 10 is also shown. Heat sink 70 is shown thermally coupled to the distal ends of the thermal leads. Said leads lie within the same plane of the housing (see figure 2).

The method of making steps recited broadly such as the steps of providing, separating, mounting, electrically connecting and encasing are deemed to be taught by Roh.

Claims 1, 3, 4, 5, 11, 13, 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Ichikawa.

Ichikawa et al shows a molded housing 8 having a integrated circuit (IC) 2 encased within. Multiple leads 5 are seen extending from the housing each having an exterior end within the housing. Each of said leads has an exterior end outside of the housing and adapted for electrical connection to a substrate (not shown). A thermally conductive support structure separated from the leads are also shown whereby the support structure comprises a base portion 10 (see figure 1b) within the housing and multiple thermal leads 9 extending from the base portion, diverging in an opposite direction from said leads, protruding outside the housing and having distal ends configured to dissipate heat conducted away from the IC device. A molded housing 8 is also shown.

The method of making steps recited broadly such as the steps of providing, separating, mounting, electrically connecting and encasing are deemed to be taught by Ichikawa.

Claims 11, 13, 14, 15, 16, 17 are rejected under 35 U.S.C. 102(a) as being anticipated by James.

James in figure 5 shows a molded housing 43 having a integrated circuit (IC) 40 encased within. Multiple leads 17, 13 are seen extending from the housing each having an exterior end within the housing. Each of said leads has an exterior end outside of the housing and adapted for electrical connection to substrate circuit board (not shown). A thermally conductive support structure separated from the leads are also shown whereby the support structure comprises a base portion 42 (see figure 5A) within the housing and multiple thermal leads 44 extending from the base portion, diverging in an

Art Unit: 2815

opposite direction from said leads 13, 17 protruding outside the housing and having distal ends configured to dissipate heat conducted away from the IC device. A molded housing 43 is also shown.

The method of making steps recited broadly such as the steps of providing, separating, mounting, electrically connecting and encasing are deemed to be taught by James et al and the step of molding is taught in col. 4, line 38.

Claims 1, 9, 11, 18 are rejected under 35 U.S.C. 102(a) as being anticipated by Lee.

Lee shows a molded housing 42 having an integrated circuit (IC) 44 encased within. Multiple leads 38 are seen extending from the housing each having an exterior end within the housing. Each of said leads has an exterior end outside of the housing and adapted for electrical connection to substrate (not shown). A thermally conductive support structure separated from the leads are also shown whereby the support structure comprises a base portion 32 within the housing and multiple thermal leads 34 extending from the base portion, diverging in an opposite direction from said leads, protruding outside the housing (exposed on the outside of the molding-see figure 3C)) and having distal ends configured to dissipate heat conducted away from the IC device. A molded housing 42 is also shown.

The method of making steps recited broadly such as the steps of providing, separating, mounting, electrically connecting and encasing are deemed to be taught by Roh.

Art Unit: 2815

Claims 1, 3-9, 11, 13-18 are rejected.

Claims 2, 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 10, 19, 20 are considered allowable over the prior art of record.

Lin and Sono et al are cited to show thermal leads.

Any inquiry concerning this communication should be directed to S. V. Clark at telephone number (571) 272-1725.


S. V. Clark
Primary Examiner
Art Unit 2815

September 6, 2004